

CLAIMS

- 5 1. Basic cobalt(II) carbonate, agglomerated from fine primary particles and of general composition $\text{Co}[(\text{OH})_2]_a[\text{CO}_3]_{1-a}$, where $0.1 \leq a \leq 0.9$, characterised in that the agglomerates have a spheroidal habit and the average agglomerate diameter is 3 to 50 μm .
- 10 2. Basic cobalt(II) carbonate agglomerates according to claim 1, characterised in that the agglomerate diameter is 5 - 20 μm .
3. Basic cobalt(II) carbonate agglomerates according to either one of claims 1 or 2, characterised in that they have tap densities of $\geq 1.6 \text{ g/cm}^3$ and bulk densities of $\geq 1.2 \text{ g/cm}^3$.
- 15 4. A process for producing basic cobalt(II) carbonate agglomerates according to one or more of claims 1 to 3, characterised in that aqueous solutions of cobalt salts of general formula CoX_2 , where X represents Cl^- , NO_3^- and/or $\frac{1}{2} \text{SO}_4^{2-}$, are reacted with aqueous solutions or suspensions of alkali and/or ammonium carbonates and/or hydrogen carbonates at temperatures between 20 40 and 100°C, preferably 60 to 90°C, and the resulting basic cobalt(II) carbonate agglomerates are subsequently filtered off and washed until they are neutral and free from salts.
- 25 5. A process for producing agglomerated cobalt(II) hydroxide, characterised in that basic cobalt(II) carbonate agglomerates according to one or more of claims 1 to 4 are reacted in suspension with aqueous alkaline liquors and/or ammonia.
- 30 6. Cobalt(II) hydroxide, obtainable according to one or more of claims 4 or 5, characterised in that it consists of spheroidally agglomerated, polygonal, lamellar primary particles which have average diameters of 0.3 μm to 1.5 μm and diameter to thickness ratios between 3 and 15.
- 35 7. Cobalt(II) hydroxide according to claim 6, characterised in that the spheroidal agglomerates have an average diameter of 3 - 50 μm , preferably 5 - 20 μm .

8. Cobalt(II) hydroxide according to either one of claims 6 or 7, characterised in that it has tap densities of $\geq 1 \text{ g/cm}^3$.
- 5 9. Use of the basic cobalt(II) carbonate agglomerates according to one or more of claims 1 to 4 for the production of spheroidal, free-flowing cobalt(II) oxide and higher oxides.
- 10 10. Use of the basic cobalt(II) carbonate agglomerates according to one or more of claims 1 to 4 for the production of pure cobalt(II) salts for use in catalyst technology or in bonding agents.
11. Use of cobalt(II) hydroxides according to one or more of claims 5 to 8 as components of the nickel oxide electrode in alkaline secondary cells.
- 15 12. Use of cobalt(II) hydroxide according to one or more of claims 5 to 8 for the production of pure cobalt(II) salts for use in bonding agents and catalysts.
- 20 13. Use of cobalt(II) hydroxide according to one or more of claims 5 to 8 for the production of spheroidal, free-flowing cobalt(II) oxide or higher oxides by calcination.
- 25 14. Use of basic cobalt(II) carbonate agglomerates according to one or more of claims 1 to 4 and/or cobalt(II) hydroxide according to one or more of claims 5 to 8 for the production of cobalt pigments.